Exhibit No.:
Issue(s): Transmission
Interconnection
Distribution Reliability
Witness: James L. Ketter
Type of Exhibit: Rebuttal
Sponsoring Party: MoPSC Staff
Case No.: EM-2000-369

ON BEHALF OF THE

MISSOURI PUBLIC SERVICE COMMISSION

UTILITY OPERATIONS DIVISION

REBUTTAL TESTIMONY

OF

JAMES L. KETTER

UTILICORP UNITED INC. AND
THE EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. EM-2000-369

Jefferson City, Missouri

June, 2000

REBUTTAL TESTIMONY

OF

JAMES L. KETTER

UTILICORP UNITED INC. and

THE EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. EM-2000-369

Q. Please state your name and give your business address.

A. James L. Ketter, P.O. Box 360, Jefferson City, Missouri 65102.

Q. Mr. Ketter, by whom are you employed and in what capacity?

A. I am employed by the Missouri Public Service Commission (MPSC or Commission) as an engineer in the Engineering Section of the Electric Department.

Q. Please summarize your educational background and professional experience.

A. I received a Bachelor of Science degree in Electrical Engineering from the University of Missouri-Columbia in 1970. I served for 4 1/2 years as an officer in the United States Navy and returned to the University of Missouri-Columbia campus to pursue an advanced degree. In December 1977, I received a Masters degree in Business Administration from the University of Missouri-Columbia.

I have been employed by the Commission since 1976. As an engineer on the Staff, I have testified before the Commission on certificates for service areas, electric transmission and power plant certification cases and I have presented testimony on rate design in electric, steam and gas rate cases. I have testified before the Commission in cases involving territorial agreements. I am a registered Professional

Engineer in the state of Missouri; my registration number is E-20056. I am a member of the National Society of Professional Engineers and I am a member of the Jefferson City Chapter of the Missouri Society of Professional Engineers.

Q. What is the purpose of your testimony in this case?

A. Concerning this application from UtiliCorp United Inc. (UtiliCorp) to merge its electric operations with The Empire District Electric Company (Empire), the purpose of my testimony is to discuss issues involving the interconnection of transmission facilities and the reliability of the distribution system for the combined company.

UtiliCorp and Empire presently have no direct connection of their transmission facilities. UtiliCorp witness Richard C. Kreul outlines in his direct testimony alternatives studied to provide a direct connection for the proposed merger. I will address the alternative assumed by the Staff in evaluating the total merger costs. I will also address electric service reliability to customers under the proposed merger, and the need for establishment of reliability indices, so that the merger is not detrimental to the public interest.

Q. How does your testimony filed in this merger application compare to the testimony you filed earlier concerning the same issues in the UtiliCorp/St. Joseph Light & Power Company merger application, Case No. EM-2000-292?

A. This testimony is very similar, and in some sections is identical to, the testimony on the same issues I previously filed in Case No. EM-2000-292.

TRANSMISSION LINE INTERCONNECTION

Q. Have you reviewed the direct testimony of Mr. Kreul and the proposed transmission interconnection alternatives?

A. Yes, I have.

Q. Please summarize your conclusions concerning the proposed alternatives for direct interconnection of the two electric utilities.

A. The present configuration of the transmission systems of UtiliCorp and Empire does not include a direct connection between the two systems. The preferred option identified by Mr. Kreul is construction of a 161 kV line from UtiliCorp's Nevada Substation to Empire's Asbury Generating Station. The estimated cost for this option is $16 million, which includes construction of approximately 42 miles of 161 kV transmission line and terminations at substations at either end of the line. This is the least cost option for a physical connection of the two utilities and the Staff used this cost in evaluating total merger costs.

Q. Does this alternative of constructing a new transmission line raise any problems?

A. Yes. New transmission line construction can be difficult to predict from the perspective of the time and cost required to complete. Acquiring new right-of-way can be an expensive and time-consuming process. The costs for right-of-way and possible condemnation costs are unknown. This uncertainty makes quantification of the cost more difficult, if in fact a new transmission line is needed to provide a connection between the merged systems.

Q. Mr. Kreul identified other options for electric system interconnection that did not require new construction. Did you evaluate these alternatives?

A. Yes. Another option is to participate in a regional transmission organization. The Midwest Independent System Operator (ISO) or the Southwest Power Pool (SPP) Regional Transmission Organization (RTO) provide opportunities for the merged entity to integrate the separate systems through the purchase of network transmission service. The SPP offers Network Service through a Federal Energy Regulatory Commission (FERC) approved regional tariff. UtiliCorp has indicated that it has requested an impact study from the SPP for participation on this tariff. UtiliCorp has received a response from the SPP concerning the requirements for network service and UtiliCorp has found this option more costly than building new transmission facilities.

Q. If you assume that the transmission interconnection can be accomplished by one of the above options, what other cost is involved in merging the two transmission systems?

A. UtiliCorp has proposed that the merged utilities would be centrally dispatched from the Missouri Public Service (MPS) dispatch center, located in Lee's Summit, Missouri. Control of the merged transmission system will require routing of the Empire Supervisory Control and Data Acquisition (SCADA) system inputs to Lee's Summit. This will be accomplished by routing communication lines from the Empire dispatch center, located in Joplin, to Lee's Summit so that data and remote operation of equipment can be accessed from Lee's Summit. This is a transition cost, estimated at $1 million, that is required to merge the service areas and dispatch from Lee's Summit. The Staff has also used the $1 million estimated cost in estimating the total merger costs.

DISTRIBUTION RELIABILITY

Q. Are you involved with responding to customer inquiries concerning the reliability of electric service?

A. Yes, as a member of the Electric Department Engineering Staff, I respond to inquiries that are referred from the Commission's Consumer Services Department or from direct contact with the public.

Q. Will other Staff witnesses address quality of service issues?

A. Yes, Staff witness Lisa A. Kremer of the Engineering and Management Services Department (EMSD) is submitting testimony concerning service indicators for the Customer Call Center and Staff witness John M. Kiebel II of the EMSD is submitting testimony concerning quality of service issues.

Q. UtiliCorp witness Stephen L. Pella addresses the implementation plan for a merged operation of the UtiliCorp and Empire systems. Are there potential improvements in the provision of reliable service offered to Empire customers by the proposed merger with UtiliCorp?

A. Yes. A computer-aided dispatching system utilized by UtiliCorp allows service technicians to work remotely more efficiently and effectively by providing information to the service truck. Communication between the Customer Call Center and the truck would provide updates and better information to the workers that would speed the response to customers' needs. This technology is a great tool in providing efficient and effective response to outages and response in general to customer needs. Implementation of this technology in the Empire service area is subject to further analysis by UtiliCorp to

determine the feasibility of utilizing this computer-aided dispatch in the Empire service area.

Communication between computers across the Empire territory is necessary to operate this system of a direct link to the service truck. The feasibility of expanding this system into the Empire service area has not been established. UtiliCorp indicates that if the analysis is positive, the current timetable to expand computer-aided dispatch to the Empire area is the third quarter of 2001. Offering this technology to the Empire area could have a positive benefit to Empire customers, if it can be economically implemented.

Q. If the UtiliCorp and the Empire systems are merged, how can reliability be monitored?

A. Reliability measures that are currently maintained by UtiliCorp include a System Average Interruption Frequency Index (SAIFI), a System Average Interruption Duration Index (SAIDI) and a Customer Average Interruption Duration Index (CAIDI). These indices provide information from UtiliCorp districts and system-wide averages that can track the overall performance of the delivery of electric service. These same indices are maintained by Empire to track service interruptions.

Use of these indices on a total company basis may not reveal the existence of local areas that experience unusual service interruptions, the existence of which are usually brought forward by customer complaints to the utility or to the Commission's Consumer Services Department. Resolution of individual or isolated problems will continue to be addressed by utility action, through the recognition of the need for system improvements, or complaints from customers.

These indices (SAIFI, SAIDI and CAIDI) will provide a benchmark to monitor how electric service reliability is being maintained if the utilities are merged. Reliable electric service is an important issue for customers, regardless of the electric supplier, and will be an important issue as the electric industry moves toward a competitive market.

Below is a tabulation of the SAIFI, SAIDI and CAIDI results for UtiliCorp's Missouri Public Service division (MPS) and Empire. These numbers reflect the actual outages and number of customers, without any changes for unusual weather occurrences:

UTILICORP – MPS

	1997	1998	1999	3 YR AVG
SAIFI	0.9830	1.2950	0.9217	1.0666
SAIDI	1.3171	3.8153	1.1474	2.0933
CAIDI	1.3399	2.9461	1.2449	1.8436

EMPIRE

	1997	1998	1999	3 YR AVG
SAIFI	1.14	2.48	2.03	1.9200
SAIDI	0.96	1.60	1.80	1.4800
CAIDI	1.20	1.07	2.06	1.3900

The SAIFI index (number of occurrences) reflects the average frequency that customers experience electric outages and is defined as the total number of customers interrupted divided by the total number of customers. The SAIDI index (hours) reflects the system average interruption duration and is defined as the sum of all customer interruption duration divided by the total number of customers. The CAIDI index (hours) reflects the

customer average interruption duration and is defined as the sum of all customer interruption duration divided by the total number of customers interrupted.

These reliability indices show overall system performance as an average of the total customers, the system average duration and the customer average duration. These measures can help in accessing the performance of the utility in providing reliable electric service. The indices will help define the quality of service provided and bring attention to any positive or negative impact that a merger of utility systems might bring.

Q. What is your recommendation concerning the use of the SAIFI, SAIDI and CAIDI indices to monitor quality of electric service?

A. My recommendation, should the proposed merger of UtiliCorp and Empire be approved, is that UtiliCorp be directed to maintain the SAIFI, SAIDI and CAIDI reliability measures separately for its MPS and Empire divisions, and provide this information to the Staff in the manner recommended in the rebuttal testimony of Staff witness Kiebel. The Staff will monitor this information, as well as the complaints received from customers, to help ensure that customers continue to receive reliable electric service.

Further, I recommend that rolling three-year averages of the SAIFI, SAIDI and CAIDI indices be used as the appropriate indicators for distribution reliability of service for MPS and Empire after the merger. The process for monitoring these indicators and for MPS and Empire to take remedial action in this area, if applicable, is outlined in the rebuttal testimony of Staff witness Kiebel. The rolling average will include the most current three years of distribution service experience for each division, calculated separately. These averages should be adjusted, as appropriate, to eliminate the effects of

emergency, catastrophe, natural disaster, extreme adverse weather conditions, sabotage or work stoppage before any remedial actions are required of MPS or Empire.

Q. Does this conclude your rebuttal testimony?

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Joint Application of UtiliCorp United Inc. and The Empire District Electric Company for Authority to Merge The Empire District Electric Company with and into UtiliCorp United Inc., and, in Connection Therewith, Certain Other Related Transactions.	))))))	CASE NO. EM-2000-369

AFFIDAVIT OF JAMES L. KETTER

STATE OF MISSOURI)
) ss
COUNTY OF COLE)

James L. Ketter, of lawful age, on his oath states: that he has participated in the preparation of the foregoing written testimony in question and answer form, consisting of 9 pages of testimony to be presented in the above case, that the answers in the attached written testimony were given by him; that he has knowledge of the matters set forth in such answers; and that such matters are true to the best of his knowledge and belief.

James L. Ketter

Subscribed and sworn to before me this 20th day of June, 2000.

Joyce C. Neuner
Notary Public, State of Missouri
County of Osage
My Commission Exp. 06/18/2001

Notary Public

My commission expires